

**Due:** Friday, 11/21, 2:10pm, PHYS360 Assignment 12

**Reading:**

1. Griffiths, Ch.4, pg. 160-190. There will be two questions on the Friday's reading quiz (11/21/08) relating to:
  - a) Be able to describe spin state of an electron after passing through a Stern-Gerlach apparatus and
  - b) Know how to add spin (and angular momentum)

**Problems:**

1. A particle of spin 1/2 is under the influence of a magnetic field  $\vec{B} = B_0 \sin(\omega t)\hat{z}$ .
  - a) Find the Hamiltonian (as a matrix) and find the spinor describing the state of the system at time  $t$ .
  - b) If  $|\chi(0)\rangle = |\chi_+^{(y)}\rangle$ , find the probability that a measurement of  $S_y$  at time  $t$  results in  $+\hbar/2$ .

Problem 5.3, pg 203 OR Problem 5.2, pg 203

Problem 5.5, pg 206

Problem 5.9, pg 214

Problem 5.12, pg 216